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Bibliography

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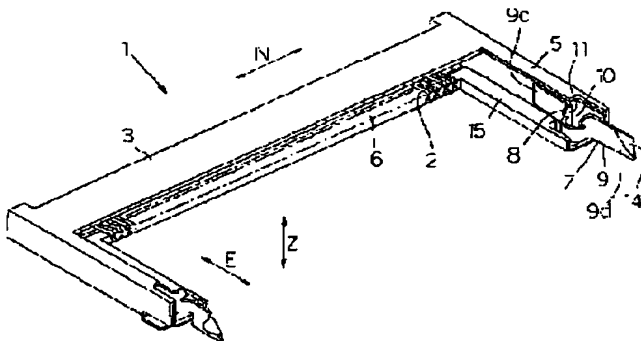
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Summary

(57) [Abstract]

[Objects of the Invention] This design is the purposes with main fabrication obtaining the easy piece 8 of a latch.

[Elements of the Invention] Edge section 4a of the printed circuit board-like object 4 is inserted in the opening 6 of housing 3 from the slanting upper part. subsequently, in the electrical connector 1 which is made to rotate this printed circuit board-like object 4 to a horizontal position, hooks the piece 8 of a latch of the latch section 7 on upper surface 4b of the above-mentioned printed circuit board-like object 4, and locks it Each piece 8 of a latch of the latch section 7 of the above-mentioned couple A right angle G bends from the base 9 of the above-mentioned latch section 7 to a base 9 centering on the bending axis X which met in the vertical direction Z. It is the piece of a metal of the couple which the medial surface 11 of the piece 8 of a latch faces across a gap 10. each of the piece 8 of a latch of the above-mentioned couple It is characterized by having the taper side 12 which inclined from the upper part so that it might keep away from a base 9 toward the lower part, and the lower contact side 13 which contacts the above-mentioned printed circuit board-like object 4 succeeding the above-mentioned taper side 12 lower 12a.

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CLAIMS

[Utility model registration claim]

[Claim 1] The terminal 2 located up and down on both sides of the opening 6 in which edge section 4a of the printed circuit board-like object 4 is inserted, It consists of the housing 3 with which two or more stable ranking and hierarchy were equipped with the above-mentioned terminal 2, and RATCHIA-MU 5 of the couple prolonged in parallel from the both sides of the above-mentioned housing 3. It has the metal latch section 7 of the couple attached so that RATCHIA-MU 5 of the above-mentioned couple might be faced mutually. It is the electrical connector 1 by which the piece 8 of a latch bent from the base 9 of the latch section 7 inside was formed in each of the latch section 7 of the above-mentioned couple. Edge section 4a of the above-mentioned printed circuit board-like object 4 is inserted in the above-mentioned opening 6 from the slanting upper part. In the electrical connector 1 which is made to rotate this printed circuit board-like object 4 to a horizontal position, hooks the piece 8 of a latch of the above-mentioned latch section 7 on upper surface 4b of the above-mentioned printed circuit board-like object 4, and locks it, subsequently, each piece 8 of a latch of the latch section 7 of the; above-mentioned couple A right angle G bends from the base 9 of the above-mentioned latch section 7 to a base 9 centering on the bending axis X which met in the vertical direction Z. It is the piece of a metal of the couple which the medial surface 11 of the piece 8 of a latch faces across a gap 10. each of the piece 8 of a latch of the above-mentioned couple The electrical connector for printed circuit board-like object connection characterized by having the taper side 12 which inclined from the upper part so that it might keep away from a base 9 toward the lower part, and the lower contact side 13 which contacts the above-mentioned printed circuit board-like object 4 succeeding the above-mentioned taper side 12 lower 12a.

[Claim 2] The piece 8 of a latch of each couple of the latch section 7 of the above-mentioned couple is an electrical connector for printed circuit board-like object

connection according to claim 1 characterized by curving inside so that the point section 8a may face mutually.

[Claim 3] Each base 9 of the latch section 7 of the above-mentioned couple is an electrical connector for printed circuit board-like object connection according to claim 1 characterized by forming the piece 14 of bending which bending by the outside centering on the normal-axis line P and bending by the outside centering on the longitudinal-axis line Q were compounded by the point section upper part, and was bent.

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DETAILED DESCRIPTION

[Detailed explanation of a design]

[0001]

[Industrial Application]

This design starts the electrical connector for printed circuit board-like object connection, and is related with the electrical connector which pivots printed circuit board-like objects, such as a printed circuit board and memory card, in more detail.

[0002]

[Description of the Prior Art]

As everyone knows, there is an electrical connector which pivots printed circuit board-like objects, such as a printed circuit board and memory card. When this electrical connector is explained using the sign in the reference view shown by drawing 15 from drawing 13, the above-mentioned electrical connector The terminal located up and down on both sides of opening in which the edge section of the printed circuit board-like object 104 is inserted, It consists of housing with which two or more stable ranking and hierarchy were equipped with the above-mentioned terminal, and RATCHIA-MU of the couple prolonged in parallel from the both sides of the above-mentioned housing. It has the latch section 107 of the couple attached so that RATCHIA-MU of the above-mentioned couple might be faced mutually. It is

the electrical connector by which the piece 108 of a latch bent from the base 109 of the latch section 107 inside was formed in each of the latch section 107 of the above-mentioned couple. The edge section of the above-mentioned printed circuit board-like object 104 is inserted in the above-mentioned opening from the slanting upper part. Subsequently, it is the electrical connector which is made to rotate this printed circuit board-like object 104 to a horizontal position, hooks the piece 108 of a latch of the above-mentioned latch section 107 on upper surface 104b of the upper mark printed circuit board-like object 104, and locks it.

[0003]

When its attention was paid to each piece 108 of a latch of the latch section 107 of the above-mentioned couple in the place, the conventional piece 108 of a latch was the piece 108 of a latch of only one sheet which curved in the inside lower part from up 109a of the base 109 of the above-mentioned latch section 107.

[0004]

[Problem(s) to be Solved by the Device]

According to the above-mentioned conventional technology, in the following point, it has some faults. As the 1st, since the above-mentioned piece of a latch was curved and formed in the inside lower part, it was difficult for it to take out the above-mentioned curve state with a sufficient precision. That is, when equipped with the above-mentioned printed circuit board-like object, the above-mentioned piece of a latch needs to be caught in the upper surface of this printed circuit board-like object, and needs to carry out elastic deformation of the above-mentioned base outside at the time of removal of the above-mentioned printed circuit board-like object, and needs to make the above-mentioned connection cancel. Therefore, processing which what needs to be taken out with a sufficient precision incurvates the curve state of the above-mentioned piece of a latch, and fabricates it was difficult, and it was difficult to always take out the product precision as a demand.

[0005]

As the 2nd, since only only the one above-mentioned piece of a latch was formed in each latch section of a couple, it had to hook and lock the side the unilateral of the above-mentioned printed circuit board-like object, and else by the piece of a latch of this one each, and had the problem that the lock force was comparatively weak.

[0006]

Therefore, the place made into the purpose of this design is to offer the technology in which the lock force from the piece of a latch to this printed circuit board-like object is comparatively powerful, when it is easy to fabricate the piece of a latch which can perform lock to the above-mentioned printed circuit board-like object, and lock release good to the 1st comparatively simply and it is equipped with the above-mentioned printed circuit board-like object the 2nd.

[0007]

[Means for Solving the Problem]

In order to solve the above-mentioned purpose, this design has the following

technical means. Namely, if this is explained using the sign in the accompanying drawing corresponding to an example The terminal 2 with which this design is located up and down on both sides of the opening 6 in which edge section 4a of the printed circuit board-like object 4 is inserted, It consists of the housing 3 with which two or more stable ranking and hierarchy were equipped with the above-mentioned terminal 2, and RATCHIA-MU 5 of the couple prolonged in parallel from the both sides of the above-mentioned housing 3. It has the latch section 7 of the couple attached so that RATCHIA-MU 5 of the above-mentioned couple might be faced mutually. It is the electrical connector 1 by which the piece 8 of a latch bent from the base 9 of the latch section 7 inside was formed in each of the latch section 7 of the above-mentioned couple. Edge section 4a of the above-mentioned printed circuit board-like object 4 is inserted in the above-mentioned opening 6 from the slanting upper part. subsequently, in the electrical connector 1 which is made to rotate this printed circuit board-like object 4 to a horizontal position, hooks the piece 8 of a latch of the above-mentioned latch section 7 on upper surface 4b of the upper mark printed circuit board-like object 4, and locks it Each piece 8 of a latch of the latch section 7 of the above-mentioned couple A right angle G bends from the base 9 of the above-mentioned latch section 7 to a base 9 centering on the bending axis X which met in the vertical direction Z. It is the piece of a metal of the couple which the side 11 faces across a gap 10. each of the piece 8 of a latch of the above-mentioned couple It is the electrical connector for printed circuit board-like object connection characterized by having the taper side 12 which inclined from the upper part so that it might keep away from a base 9 toward the lower part, and the lower contact side 13 which contacts the above-mentioned printed circuit board-like object 4 succeeding the above-mentioned taper side 12 lower 12a.

[0008]

Moreover, the place by which it is characterized [other] is characterized by the point section 8a curving inside so that it may face mutually by the piece 8 of a latch of each couple of the latch section 7 of the above-mentioned couple.

[0009]

Moreover, the place by which it is characterized [other] is characterized by forming the piece 14 of bending by which bending by the outside [base / each / of the latch section 7 of the above-mentioned couple / 9 / upper part / point section] centering on the normal-axis line P and bending by the outside centering on the longitudinal-axis line Q were compounded, and were bent.

[0010]

[Function]

What is necessary is according to the above-mentioned composition, just to merely bend it at a right angle on the basis of the above-mentioned bending axis X at the time of a fabricating operation, since each piece 8 of a latch of the latch section 7 of the above-mentioned couple is bent by the right angle G from the base 9 of the above-mentioned latch section 7 to the base 9 centering on the bending axis X

which met in the vertical direction Z. This is easy to fabricate the piece 8 of a latch which can perform lock to the above-mentioned printed circuit board-like object 4, and lock release good comparatively simply.

[0011]

Moreover, since each piece 8 of a latch of the latch section 7 of the above-mentioned couple has accomplished the couple, when it equips with the above-mentioned printed circuit board-like object 4, the piece 8 of a latch is caught in the above-mentioned printed circuit board-like object 4 in two points, and it can make the lock force of the piece 8 of a latch to the printed circuit board-like object 4 a comparatively strong thing.

[0012]

[Example]

Next, with reference to drawing 8, the 1st example is explained from drawing 1. An electrical connector 1 consists of a terminal 2, housing 3, and RATCHIA-MU 5. The above-mentioned terminal 2 is located in the upper and lower sides which met in the vertical direction Z on both sides of the opening 6 in which edge section 4a of the printed circuit board 4 which is a printed circuit board-like object is inserted, and two or more stable ranking and hierarchy are equipped with the above-mentioned terminal 2 along with the longitudinal direction N to housing 3. And the contact section of the above-mentioned terminal 2 contacts the printed circuit of the above-mentioned printed circuit board 4 from the upper and lower sides.

[0013]

The above-mentioned housing 3 is prolonged along with the longitudinal direction N, and above-mentioned RATCHIA-MU 5 is mutually prolonged in parallel along with the cross direction E from the both sides of this housing 3. Moreover, when the above-mentioned printed circuit board 4 rotates from the slanting upper part to a horizontal position, the lower wall 15 which stops and supports the rotation is formed in the lower part of RATCHIA-MU 5 of the above-mentioned couple.

[0014]

The latch section 7 is attached in the inside [of RATCHIA-MU 5] 5, i.e., partner RATCHIA-MU which faces each other, side at each of RATCHIA-MU 5 of the above-mentioned couple. The above-mentioned latch section 7 consists of the piece 8 of a latch formed in the metal base 9 cross-direction E Prolonged and the pars intermedia of this base 9, and end 9c of the above-mentioned base 9 was attached in above-mentioned RATCHIA-MU 5, 9d of other ends accomplished it with the free end, and it has accomplished that elastic deformation is possible to the longitudinal direction N.

[0015]

The above-mentioned piece 8 of a latch is a piece of a metal of the couple bent so that it might become a right angle G from the above-mentioned base 9 to a base 9 centering on the bending axis X. The above-mentioned bending axis X is an axis which meets in the vertical direction Z. The piece 8 of a latch of the above-

mentioned couple is prolonged in parallel so that each medial surface 11 may face mutually across a gap 10. Moreover, each of the piece 8 of a latch of the above-mentioned couple has the taper side 12 which inclined from the upper part so that it might keep away from a base 9 toward the lower part, and the lower contact side 13 which contacts upper surface 4b of the above-mentioned printed circuit board 4 succeeding the above-mentioned taper side 12 lower 12a. And the above-mentioned piece 8 of a latch is fabricated in one with the latch section 7.

[0016]

The above-mentioned taper side 12 is a thing for making it easy to slide below and to move, the portion of curve crevice 4c formed in the printed circuit board 4 contacting the taper side 12, when rotating the above-mentioned printed circuit board 4 to a horizontal position.

[0017]

Moreover, under the piece 8 of a latch of the above-mentioned couple, the curve heights 16 which fit into curve crevice 4c of the above-mentioned printed circuit board 4 are formed. And each lower point 17 of the piece 8 of a latch of the above-mentioned couple was seen from the flat surface, is projected rather than outside curve side 16a of the above-mentioned curve heights 16, and is caught in upper surface 4a of the above-mentioned printed circuit board 4.

[0018]

Next, if its attention is paid to the above-mentioned base 9, the piece 14 of bending is bent and formed in the point section upper part of a base 9. Bending by the outside centering on the normal-axis line P which met in the vertical direction Z, i.e., the partner latch section 7 which faces each other and bending by the side of opposite, and bending by the outside centering on the longitudinal-axis line Q in alignment with the cross direction E, i.e., the partner latch section 7 which faces each other and bending by the side of opposite, are compounded, and the above-mentioned piece 14 of bending is bent.

[0019]

The above-mentioned piece 14 of bending is a thing for making it easy to operate it by the nib or the fingertip, when canceling the printed circuit board 4 locked by the above-mentioned electrical connector 1. When canceling the above-mentioned printed circuit board 4 and the above-mentioned piece 14 of bending is pushed from the upper part by the above-mentioned nib or the fingertip in detail, the above-mentioned nib and a fingertip slide on the field top of the piece 14 of bending, and the above-mentioned latch section 7 is pushed outside. That is, on the other hand, the above-mentioned latch section 7 can be pushed outside by the force only from Mukai from the upper part using the above-mentioned nib or the fingertip, and ** can also perform lock release of the above-mentioned printed circuit board 4 early easily.

[0020]

Next, how to use above-mentioned electric connection KUTATA 1 is explained. First,

edge section 4a of the above-mentioned printed circuit board 4 is turned to the opening 6 of the above-mentioned housing 3, and it inserts from the slanting upper part. Next, the printed circuit board 4 which inserted edge section 4a in the above-mentioned opening 6 is rotated to a horizontal position. At this time, curve crevice 4c of the above-mentioned printed circuit board 4 slides on the taper side 12 of the above-mentioned piece 8 of a latch, and fits into the lower part of the piece 8 of a latch. Thereby, the piece 8 of a latch of the above-mentioned couple locks a printed circuit board 4.

[0021]

Next, in order to cancel the lock of a printed circuit board 4 by which the lock was carried out [above-mentioned], the piece 14 of bending of each base 9 of the latch section 7 of the above-mentioned couple is pushed from the upper part with a nib etc. Thereby, the above-mentioned latch section 7 is pushed outside, the caught piece 8 of a latch can be taken and a lock is canceled. Then, it is made to rotate upwards and the above-mentioned printed circuit board 4 is drawn out.

[0022]

Next, with reference to drawing 12 , the 2nd example is explained from drawing 9 . In this example, the same portion as the 1st example and abbreviation mentioned above explains only a portion which omits and is different. That is, in this example, the piece 8 of a latch of the couple of the latch section 7 of the above-mentioned couple is curving inside so that the point section 8a may face mutually.

[0023]

In addition, although the above-mentioned example showed the example which used the piece of a latch of this design for the electrical connector 1 for printed-circuit-board 4, you may use the above-mentioned piece 8 of a latch for the electrical connector 1 for memory card.

[0024]

As mentioned above, since the above-mentioned piece 8 of a latch is locked by the piece 8 of a latch of a couple while being able to fabricate it by bending at a right angle G from the above-mentioned base 9 easily, its lock force is comparatively strong.

[0025]

[Effect of the Device]

As explained in full detail above, according to the claim 1 and claim 2 publication, this design each piece of a latch of the latch section of the above-mentioned couple Since it bent right-angled and fabricated from the base of the above-mentioned latch section to the base centering on the bending axis which met in the vertical direction, at the time of a fabricating operation This is [that what is necessary is just to merely bend at a right angle on the basis of the above-mentioned bending axis] easy to fabricate the piece of a latch which can perform lock to the above-mentioned printed circuit board-like object, and lock release good comparatively simply.

[0026]

Moreover, since each piece of a latch of the latch section of the above-mentioned couple accomplished and fabricated the couple, when the above-mentioned printed circuit board-like object is locked, the piece of a latch is caught in the above-mentioned printed circuit board-like object in two points, and it can make the lock force of the piece of a latch to a printed circuit board-like object a comparatively strong thing.

[0027]

Moreover, when according to the claim 3 publication the above-mentioned piece 14 of bending cancels the above-mentioned printed circuit board and the above-mentioned piece of bending is pushed from the upper part by the above-mentioned nib or the fingertip, the above-mentioned nib and a fingertip slide on the field top of the piece of bending, and the above-mentioned latch section is pushed outside. That is, on the other hand, the above-mentioned latch section can be pushed outside by the force only from Mukai from the upper part using the above-mentioned nib or the fingertip, and simply, ** can also perform lock release of the above-mentioned printed circuit board early, and tends to make operation of lock release easy.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the perspective diagram of the electrical connector for printed circuit board-like object connection shown in the 1st example of this design.

[Drawing 2] It is a perspective diagram in the state where the printed circuit board-like object was connected to the electrical connector for printed circuit board-like object connection shown in the 1st example of this design.

[Drawing 3] It is the plan of the electrical connector for printed circuit board-like object connection shown in the 1st example of this design.

[Drawing 4] It is the front view of the electrical connector for printed circuit board-

like object connection shown in the 1st example of this design.

[Drawing 5] It is the right lateral view of the electrical connector for printed circuit board-like object connection shown in the 1st example of this design.

[Drawing 6] It is the perspective diagram of the latch section of the electrical connector for printed circuit board-like object connection shown in the 1st example of this design.

[Drawing 7] The latch section of the electrical connector for printed circuit board-like object connection shown in the 1st example of this design is the perspective diagram having shown the state where the printed circuit board-like object was locked.

[Drawing 8] The latch section of the electrical connector for printed circuit board-like object connection shown in the 1st example of this design is the plan having shown the state where the printed circuit board-like object was locked.

[Drawing 9] It is the plan of the electrical connector for printed circuit board-like object connection shown in the 2nd example of this design.

[Drawing 10] It is the perspective diagram of the latch section of the electrical connector for printed circuit board-like object connection shown in the 2nd example of this design.

[Drawing 11] The latch section of the electrical connector for printed circuit board-like object connection shown in the 2nd example of this design is the perspective diagram having shown the state where the printed circuit board-like object was locked.

[Drawing 12] The latch section of the electrical connector for printed circuit board-like object connection shown in the 2nd example of this design is the plan having shown the state where the printed circuit board-like object was locked.

[Drawing 13] It is the perspective diagram of the latch section of the conventional electrical connector for printed circuit board-like object connection.

[Drawing 14] The latch section of the conventional electrical connector for printed circuit board-like object connection is the perspective diagram having shown the state where the printed circuit board-like object was locked.

[Drawing 15] The latch section of the conventional electrical connector for printed circuit board-like object connection is the plan having shown the state where the printed circuit board-like object was locked.

[Description of Notations]

1 Electrical Connector

2 Terminal

3 Housing

4 Printed Circuit Board-like Object

4a The edge section of a printed circuit board-like object

4b The upper surface of a printed circuit board-like object

5 RATCHIA-MU

6 Opening

- 7 Latch Section
- 8 Piece of Latch
- 8a The point section of the piece of a latch
- 9 Base
- 10 Gap
- 11 Medial Surface of Piece of Latch
- 12 Taper Side
- 12a The lower part of a taper side
- 13 Lower Contact Side
- 14 Piece of Bending

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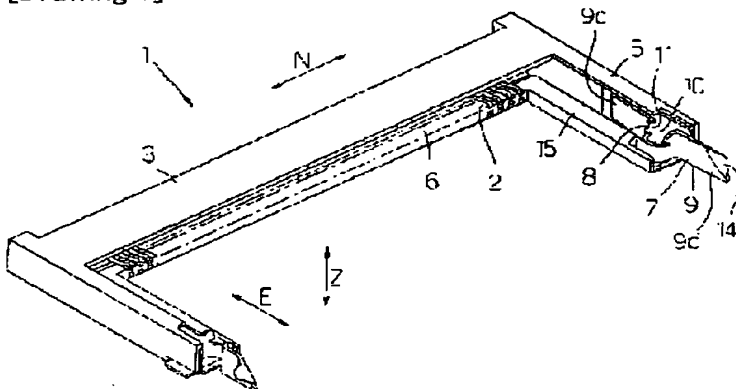
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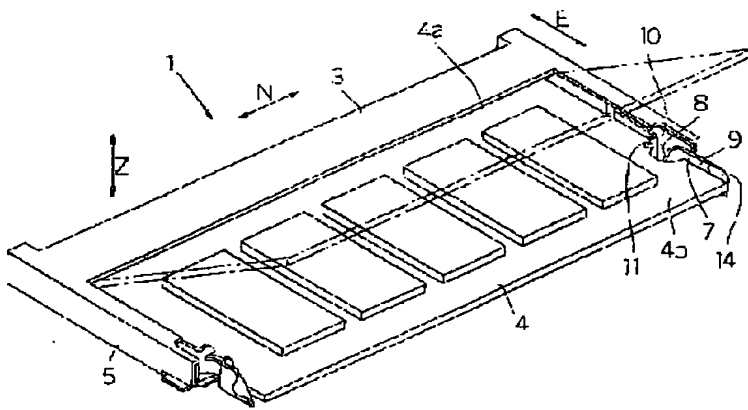
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DRAWINGS

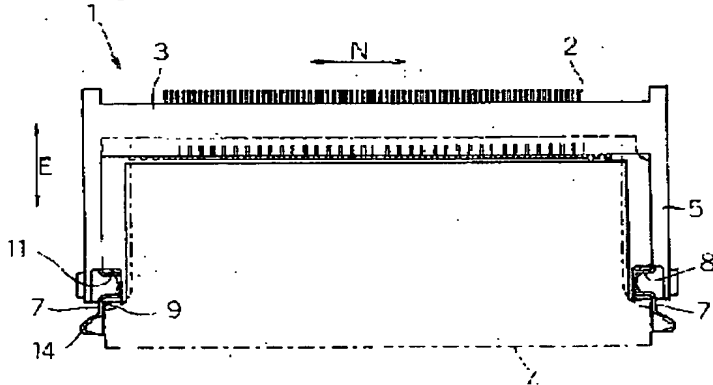
[Drawing 1]



[Drawing 2]



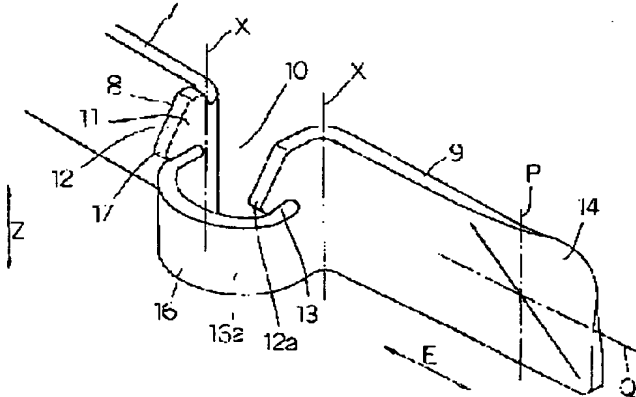
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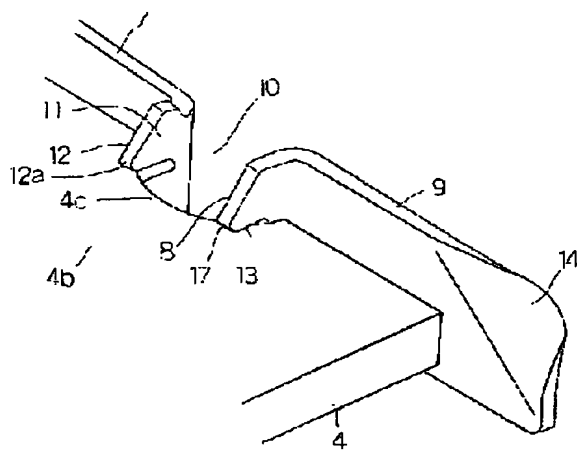
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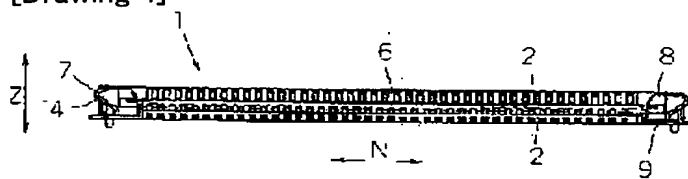
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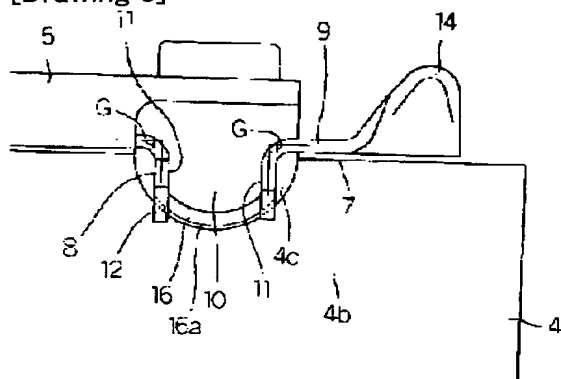
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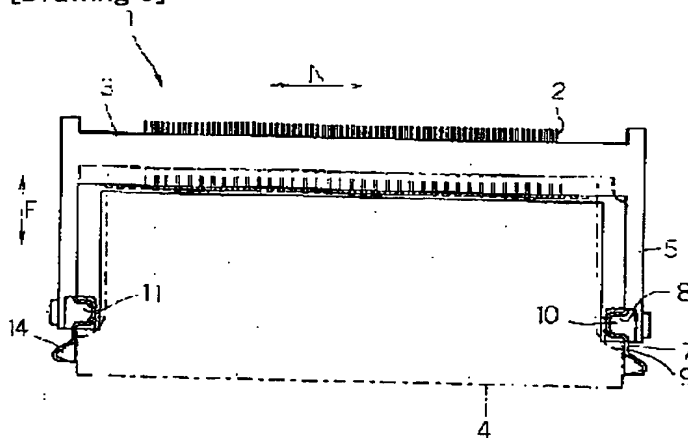
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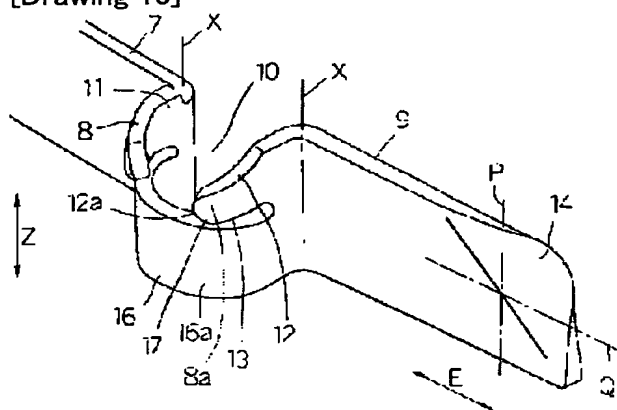
[Drawing 8]



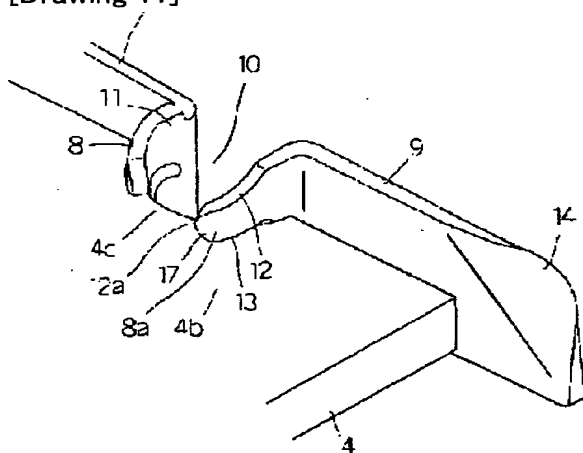
[Drawing 9]



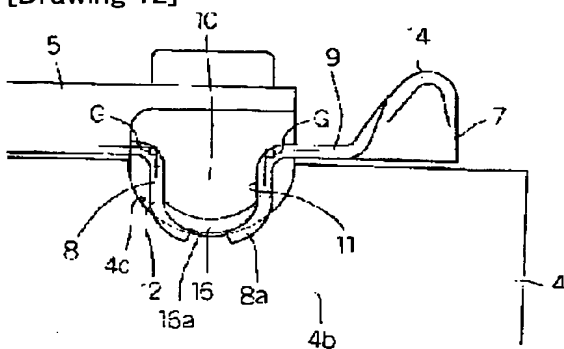
[Drawing 10]



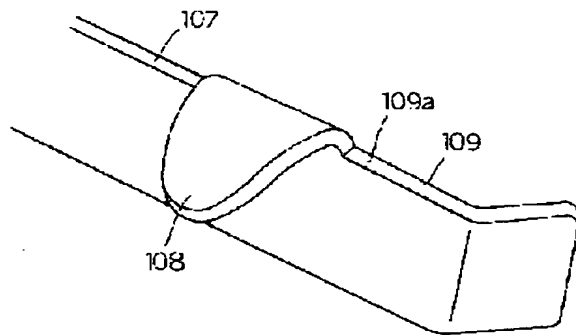
[Drawing 11]



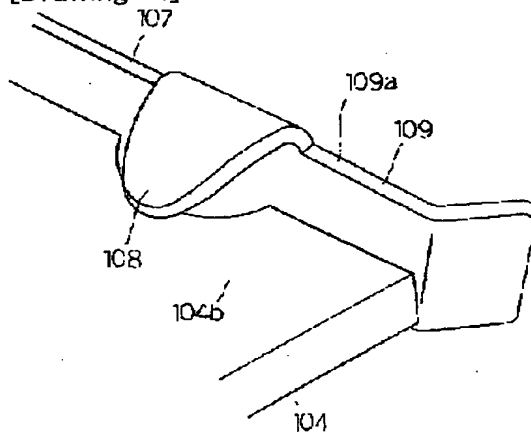
[Drawing 12]



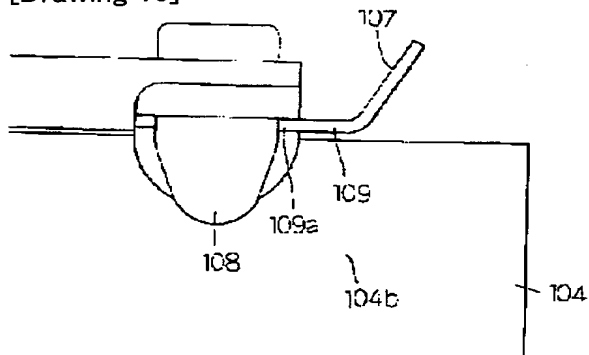
[Drawing 13]



[Drawing 14]



[Drawing 15]



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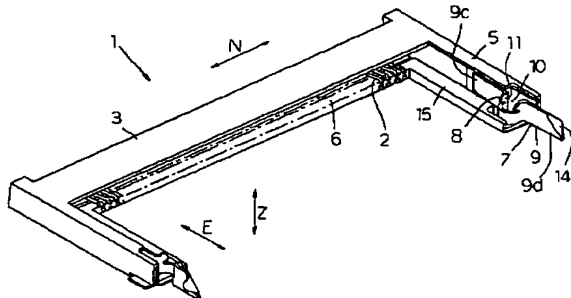
(74) 代理人 弁理士 池田 宏

(54) 【考案の名称】 印刷回路基板状体接続用電気コネクタ

(57) 【要約】

【目的】 本考案は、成形が容易なラッチ片8を得ることが主要な目的である。

【構成】 印刷回路基板状体4の端縁4aを斜め上方からハウジング3の開口部6に挿入し、次いでこの印刷回路基板状体4を水平位置まで回転させ、ラッチ部7のラッチ片8を上記印刷回路基板状体4の上面4bに引っ掛けてロックする電気コネクタ1に於て、上記一对のラッチ部7のそれぞれのラッチ片8は、上記ラッチ部7の基部9から上下方向Zに沿った折曲軸線Xを軸として基部9に対して直角Gに折り曲げられ、間隙10を挟んでラッチ片8の内側面11が向かい合う一对の金属片であって、上記一对のラッチ片8のそれぞれの、上部から下部に向かって基部9から遠ざかるように傾斜したテーパ面12と、上記テーパ面12下部12aに連続し、上記印刷回路基板状体4に当接する下部当接面13とを有することを特徴とする。



【実用新案登録請求の範囲】

【請求項1】 印刷回路基板状体4の端縁部4aが挿入される開口部6を挟んで上下に位置する端子2と、上記端子2が複数横並びに装着されたハウジング3と、上記ハウジング3の両側から並行に延びた一对のラッチアーム5とから成り、上記一对のラッチアーム5に互いに向かい合うよう取り付けられた一对の金属製ラッチ部7を有し、上記一对のラッチ部7のそれぞれに、ラッチ部7の基部9から内側へ折り曲げられたラッチ片8が形成された電気コネクタ1であって、上記印刷回路基板状体4の端縁部4aを斜め上方から上記開口部6に挿入し、次いでこの印刷回路基板状体4を水平位置まで回転させ、上記ラッチ部7のラッチ片8を上記印刷回路基板状体4の上面4bに引っ掛けてロックする電気コネクタ1に於て；上記一对のラッチ部7のそれぞれのラッチ片8は、上記ラッチ部7の基部9から上下方向Zに沿った折曲軸線Xを軸として基部9に対して直角Gに折り曲げられ、間隙10を挟んでラッチ片8の内側面11が向かい合う一对の金属片であって、上記一对のラッチ片8のそれぞれは、上部から下部に向かって基部9から遠ざかるように傾斜したテーバ面12と、上記テーバ面12下部12aに連続し、上記印刷回路基板状体4に当接する下部当接面13とを有することを特徴とする印刷回路基板状体接続用電気コネクタ。

【請求項2】 上記一对のラッチ部7のそれぞれの一对のラッチ片8は、その先部8aが互いに向かい合うよう内側に湾曲していることを特徴とする請求項1記載の印刷回路基板状体接続用電気コネクタ。

【請求項3】 上記一对のラッチ部7のそれぞれの基部9は、先部上部に、上下軸線Pを軸とした外側への折り曲げと、前後軸線Qを軸とした外側への折り曲げとが合成されて折り曲げられた折曲片14が形成されていることを特徴とする請求項1記載の印刷回路基板状体接続用電気コネクタ。

【図面の簡単な説明】

【図1】本考案の第1の実施例で示した印刷回路基板状体接続用電気コネクタの斜視図である。

【図2】本考案の第1の実施例で示した印刷回路基板状体接続用電気コネクタに印刷回路基板状体を接続した状態の斜視図である。

【図3】本考案の第1の実施例で示した印刷回路基板状体接続用電気コネクタの平面図である。

【図4】本考案の第1の実施例で示した印刷回路基板状体接続用電気コネクタの正面図である。

【図5】本考案の第1の実施例で示した印刷回路基板状体接続用電気コネクタの右側面図である。

【図6】本考案の第1の実施例で示した印刷回路基板状体接続用電気コネクタのラッチ部の斜視図である。

【図7】本考案の第1の実施例で示した印刷回路基板状体接続用電気コネクタのラッチ部が印刷回路基板状体をロックした状態を示した斜視図である。

【図8】本考案の第1の実施例で示した印刷回路基板状体接続用電気コネクタのラッチ部が印刷回路基板状体をロックした状態を示した平面図である。

【図9】本考案の第2の実施例で示した印刷回路基板状体接続用電気コネクタの平面図である。

【図10】本考案の第2の実施例で示した印刷回路基板状体接続用電気コネクタのラッチ部の斜視図である。

【図11】本考案の第2の実施例で示した印刷回路基板状体接続用電気コネクタのラッチ部が印刷回路基板状体をロックした状態を示した斜視図である。

【図12】本考案の第2の実施例で示した印刷回路基板状体接続用電気コネクタのラッチ部が印刷回路基板状体をロックした状態を示した平面図である。

【図13】従来の印刷回路基板状体接続用電気コネクタのラッチ部の斜視図である。

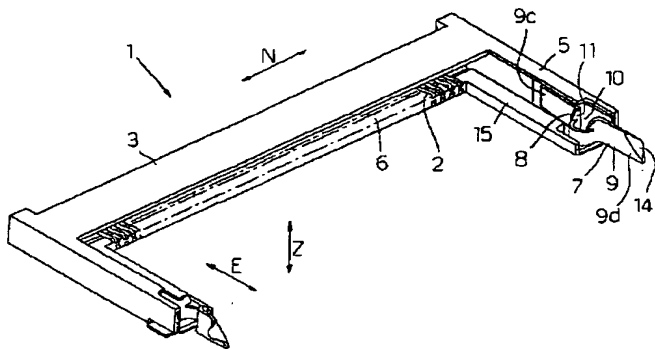
【図14】従来の印刷回路基板状体接続用電気コネクタのラッチ部が印刷回路基板状体をロックした状態を示した斜視図である。

【図15】従来の印刷回路基板状体接続用電気コネクタのラッチ部が印刷回路基板状体をロックした状態を示した平面図である。

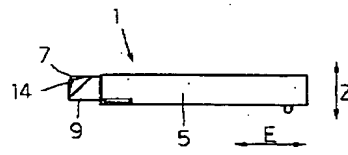
【符号の説明】

- | | |
|-----|--------------|
| 1 | 電気コネクタ |
| 2 | 端子 |
| 3 | ハウジング |
| 4 | 印刷回路基板状体 |
| 4a | 印刷回路基板状体の端縁部 |
| 4b | 印刷回路基板状体の上面 |
| 5 | ラッチアーム |
| 6 | 開口部 |
| 7 | ラッチ部 |
| 8 | ラッチ片 |
| 8a | ラッチ片の先部 |
| 9 | 基部 |
| 10 | 間隙 |
| 11 | ラッチ片の内側面 |
| 12 | テーバ面 |
| 12a | テーバ面の下部 |
| 13 | 下部当接面 |
| 14 | 折曲片 |

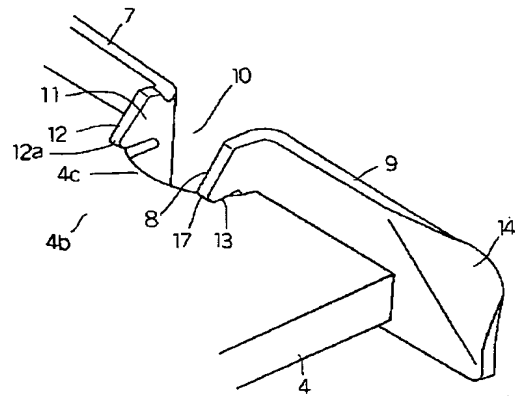
【図1】



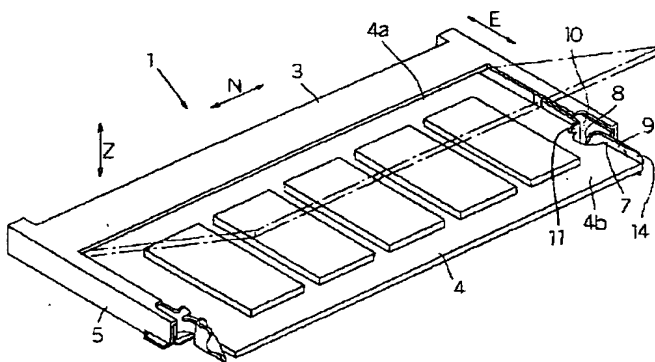
【図5】



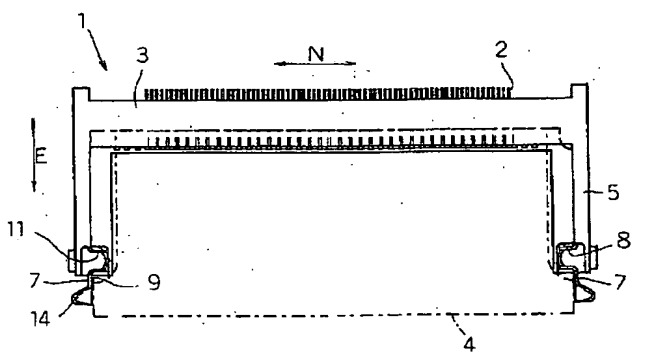
【図7】



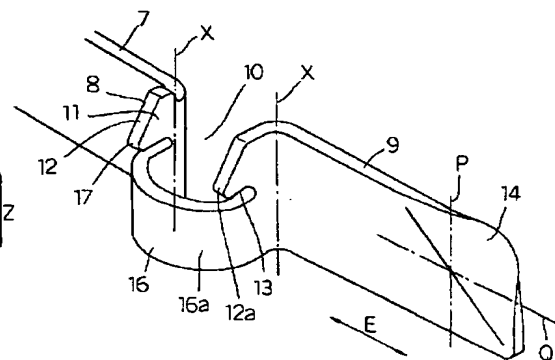
【図2】



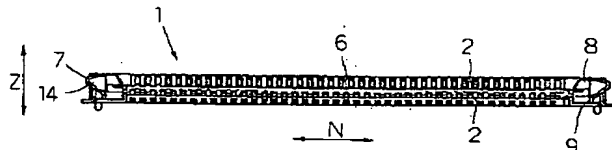
【図3】



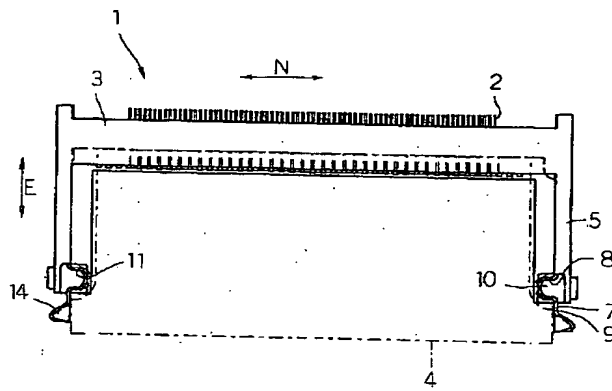
【図6】



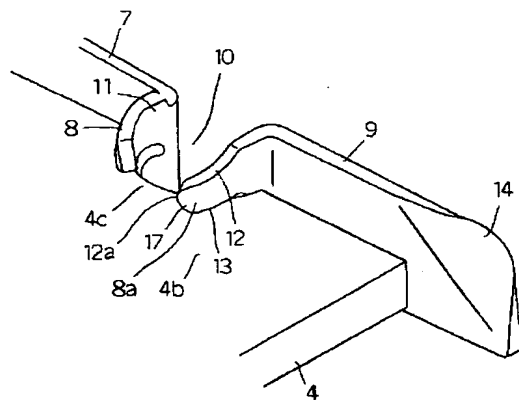
【図4】



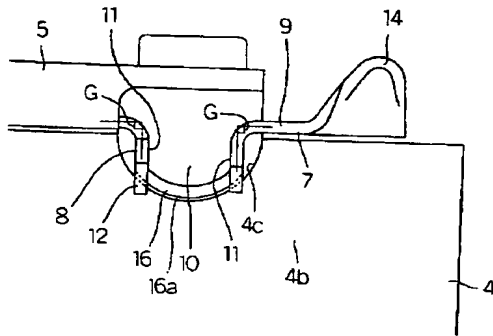
【図9】



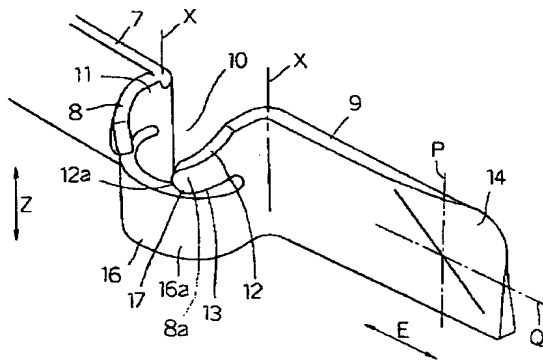
【図11】



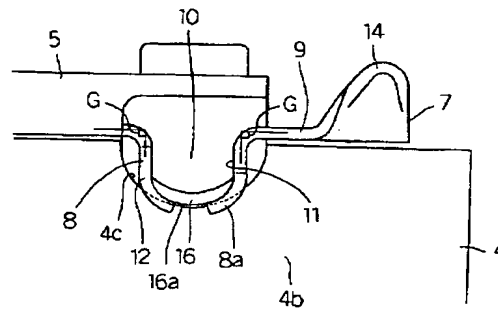
【図8】



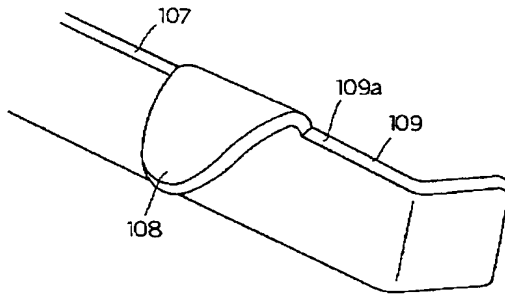
【図10】



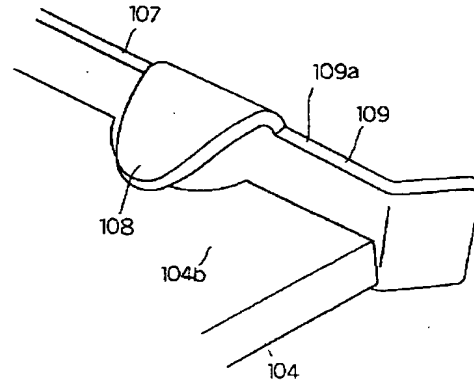
【図12】



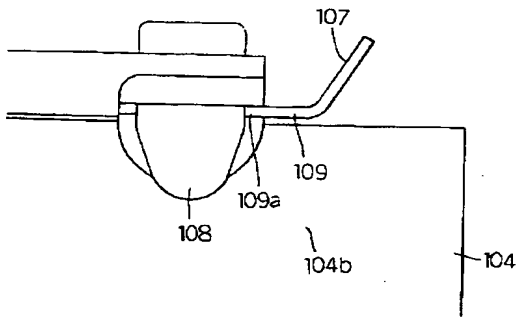
【図13】



【図14】



【図15】



【考案の詳細な説明】

【0001】

【産業上の利用分野】

本考案は印刷回路基板状体接続用電気コネクタに係り、更に詳しくは、プリント回路基板やメモ리카ード等の印刷回路基板状体を枢着する電気コネクタに関する。

【0002】

【従来の技術】

周知の通り、プリント回路基板やメモ리카ード等の印刷回路基板状体を枢着する電気コネクタがある。この電気コネクタを図13から図15で示した参照図中の符号を用いて説明すると、上記電気コネクタは、印刷回路基板状体104の端縁部が挿入される開口部を挟んで上下に位置する端子と、上記端子が複数横並びに装着されたハウジングと、上記ハウジングの両側から並行に延びた一对のラッチアームとから成り、上記一对のラッチアームに互いに向かい合うよう取り付けられた一对のラッチ部107を有し、上記一对のラッチ部107のそれぞれに、ラッチ部107の基部109から内側へ折り曲げられたラッチ片108が形成された電気コネクタであって、上記印刷回路基板状体104の端縁部を斜め上方から上記開口部に挿入し、次いでこの印刷回路基板状体104を水平位置まで回動させ、上記ラッチ部107のラッチ片108を上記印刷回路基板状体104の上面104bに引っ掛けてロックする電気コネクタである。

【0003】

所で、上記一对のラッチ部107のそれぞれのラッチ片108に着目すると、従来のラッチ片108は、上記ラッチ部107の基部109の上部109aから内側下方に湾曲したただ1枚のラッチ片108であった。

【0004】

【考案が解決しようとする課題】

上記従来技術によると、次の点に於て幾つかの不具合を有する。第1として、上記ラッチ片は、内側下方に湾曲して形成されていた為、上記湾曲状態を精度良く出すのが難しかった。即ち、上記ラッチ片は、上記印刷回路基板状体が装着さ

れたときに、この印刷回路基板状体の上面に引っ掛かり、且つ上記印刷回路基板状体の取り外し時には、上記基部を外側へ弾性変形させて上記引っ掛かりを解除せしめる必要がある。その為に、上記ラッチ片の湾曲状態を精度良く出す必要があるものの、湾曲させて成形する加工は難しく、要求通りの製品精度を常に出すことは難しかった。

【0005】

第2として、上記ラッチ片は、一对のラッチ部それぞれにただ1枚だけ形成されているものであったので、このそれぞれ1枚のラッチ片で上記印刷回路基板状体の一侧及び他側を引っ掛けてロックしなければならず、比較的ロック力が弱いという問題があった。

【0006】

従って、本考案の目的とする所は、第1に、上記印刷回路基板状体に対するロック、及びロック解除が良好に行なえるラッチ片を比較的簡単に成形し易く、第2に、上記印刷回路基板状体を装着したときに、この印刷回路基板状体に対するラッチ片からのロック力が比較的強い技術を提供することにある。

【0007】

【課題を解決するための手段】

上記目的を解決する為に、本考案は次の技術的手段を有する。即ち、実施例に対応する添付図面中の符号を用いてこれを説明すると、本考案は印刷回路基板状体4の端縁部4aが挿入される開口部6を挟んで上下に位置する端子2と、上記端子2が複数横並びに装着されたハウジング3と、上記ハウジング3の両側から並行に延びた一对のラッチアーム5とから成り、上記一对のラッチアーム5に互いに向かい合うよう取り付けられた一对のラッチ部7を有し、上記一对のラッチ部7のそれぞれに、ラッチ部7の基部9から内側へ折り曲げられたラッチ片8が形成された電気コネクタ1であって、上記印刷回路基板状体4の端縁部4aを斜め上方から上記開口部6に挿入し、次いでこの印刷回路基板状体4を水平位置まで回転させ、上記ラッチ部7のラッチ片8を上記印刷回路基板状体4の上面4bに引っ掛けロックする電気コネクタ1に於て、上記一对のラッチ部7のそれぞれのラッチ片8は、上記ラッチ部7の基部9から上下方向Zに沿った折曲軸線Xを

軸として基部9に対して直角Gに折り曲げられ、間隙10を挟んでその内側面11が向かい合う一対の金属片であって、上記一対のラッチ片8のそれぞれは、上部から下部に向かって基部9から遠ざかるように傾斜したテーパ面12と、上記テーパ面12下部12aに連続し、上記印刷回路基板状体4に当接する下部当接面13とを有することを特徴とする印刷回路基板状体接続用電気コネクタである。

【0008】

また、他の特徴とする所は、上記一対のラッチ部7のそれぞれの一対のラッチ片8は、その先部8aが互いに向かい合うよう内側に湾曲していることを特徴とする。

【0009】

また、その他の特徴とする所は、上記一対のラッチ部7のそれぞれの基部9は、先部上部に、上下軸線Pを軸とした外側への折り曲げと、前後軸線Qを軸とした外側への折り曲げとが合成されて折り曲げられた折曲片14が形成されていることを特徴とする。

【0010】

【作用】

上記構成によると、上記一対のラッチ部7のそれぞれのラッチ片8は、上記ラッチ部7の基部9から上下方向Zに沿った折曲軸線Xを軸として基部9に対して直角Gに折り曲げられているので、成形加工時には、上記折曲軸線Xを基準にしてただ直角に折り曲げれば良い。これにより、上記印刷回路基板状体4に対するロック、及びロック解除が良好に行なえるラッチ片8を比較的簡単に成形し易い。

【0011】

また、上記一対のラッチ部7のそれぞれのラッチ片8は、一対を成しているので、上記印刷回路基板状体4を装着したときに、上記印刷回路基板状体4にラッチ片8が2点で引っ掛かり、印刷回路基板状体4に対するラッチ片8のロック力を比較的強いものとすることができる。

【0012】

【実施例】

次に、図1から図8を参照して第1の実施例を説明する。電気コネクタ1は、端子2と、ハウジング3と、ラッチアーム5とから成る。上記端子2は、印刷回路基板状体であるプリント回路基板4の端縁部4aが挿入される開口部6を挟んで上下方向Zに沿った上下に位置し、上記端子2がハウジング3に対して左右方向Nに沿って複数横並びに装着されている。そして、上記端子2のコンタクト部が上記プリント回路基板4の印刷回路に上下から接触する。

【0013】

上記ハウジング3は、左右方向Nに沿って延びていて、このハウジング3の両側から前後方向Eに沿って上記ラッチアーム5が互いに並行に延びている。また、上記一对のラッチアーム5の下部には、上記プリント回路基板4が斜め上方から水平位置に回動されたとき、その回動を止め支持する下部壁15が設けられている。

【0014】

上記一对のラッチアーム5のそれぞれには、ラッチアーム5の内側、つまり向かい合う相手ラッチアーム5側にラッチ部7が取り付けられている。上記ラッチ部7は、前後方向E延びる金属製の基部9と、この基部9の中間部に形成されたラッチ片8とから成り、上記基部9の一端9cが上記ラッチアーム5に取り付けられ、他端9dが自由端と成して左右方向Nに弾性変形可能と成している。

【0015】

上記ラッチ片8は、上記基部9から折曲軸線Xを軸として基部9に対して直角Gとなるよう折曲げられた一对の金属片である。上記折曲軸線Xは、上下方向Zに沿う軸線である。上記一对のラッチ片8は、それぞれの内側面11が間隙10を挟んで互いに向かい合うよう並行に延びている。また、上記一对のラッチ片8のそれぞれは、上部から下部に向かって基部9から遠ざかるように傾斜したテーパ面12と、上記テーパ面12下部12aに連続し、上記プリント回路基板4の上面4bに当接する下部当接面13とを有する。そして、上記ラッチ片8はラッチ部7と一体的に成形されている。

【0016】

上記テーパ面12は、上記プリント回路基板4を水平位置に回転するとき、プリント回路基板4に形成された湾曲凹部4cの部分がテーパ面12に当接しつつ下方へ滑り移動し易くする為のものである。

【0017】

また、上記一对のラッチ片8の下方には、上記プリント回路基板4の湾曲凹部4cに嵌る湾曲凸部16が形成されている。そして、上記一对のラッチ片8のそれぞれの下部先端部17は、平面から見て上記湾曲凸部16の外側湾曲面16aよりも突出していて、上記プリント回路基板4の上面4aに引っ掛かるものである。

【0018】

次に、上記基部9に着目すると、基部9の先部上部には、折曲片14が折り曲げられて形成されている。上記折曲片14は、上下方向Zに沿った上下軸線Pを軸とした外側への折り曲げ、つまり向かい合う相手ラッチ部7と反対の側への折り曲げと、前後方向Eに沿った前後軸線Qを軸とした外側への折り曲げ、つまり向かい合う相手ラッチ部7と反対の側への折り曲げとが合成されて折り曲げられている。

【0019】

上記折曲片14は、上記電気コネクタ1にロックされたプリント回路基板4を解除するとき、例えばペン先や指先で操作し易くする為のものである。詳しくは、上記プリント回路基板4を解除するとき、上記ペン先や指先で上記折曲片14を上方から押した場合、上記ペン先や指先が折曲片14の面上を滑り、上記ラッチ部7は、外側へ押される。つまり、上記ペン先や指先を使った上方からの一方向からのみの力で上記ラッチ部7を外側へ押すことができ、簡単に而も早く上記プリント回路基板4のロック解除が行なえるものである。

【0020】

次に、上記電気コネクタ1の使い方を説明する。まず、上記プリント回路基板4の端縁部4aを上記ハウジング3の開口部6に向けて斜め上方から挿入する。次に、上記開口部6に端縁部4aを挿入したプリント回路基板4を水平位置まで回転させる。このとき、上記プリント回路基板4の湾曲凹部4cが上記ラッチ

片8のテーパ面12を滑っていき、ラッチ片8の下部に嵌る。これにより、上記一对のラッチ片8がプリント回路基板4をロックするものである。

【0021】

次に、上記ロックされたプリント回路基板4のロックを解除するには、ペン先等で上記一对のラッチ部7のそれぞれの基部9の折曲片14を上方から押す。これにより、上記ラッチ部7が外側に押され、引っ掛かっていたラッチ片8が取れロックが解除される。この後、上記プリント回路基板4を上方へ回動させ、引き抜くものである。

【0022】

次に、図9から図12を参照して第2の実施例を説明する。この例では、上述した第1の実施例と略同様の部分は省略し異なる部分のみを説明する。即ち、この例では、上記一对のラッチ部7の一对のラッチ片8は、その先部8aが互いに向かい合うよう内側に湾曲している。

【0023】

尚、上記実施例では、プリント回路基板4用の電気コネクタ1に本考案のラッチ片を用いた例を示したが、この他にメモリカード用の電気コネクタ1に上記ラッチ片8を用いても良い。

【0024】

以上のように、上記ラッチ片8は、上記基部9から直角Gに折り曲げることで簡単に成形することができると共に、一对のラッチ片8でロックするのでロック力が比較的強い。

【0025】

【考案の効果】

以上詳述した如く、本考案は請求項1及び請求項2記載によると、上記一对のラッチ部のそれぞれのラッチ片は、上記ラッチ部の基部から上下方向に沿った折曲軸線を軸として基部に対して直角に折り曲げて成形したので、成形加工時には、上記折曲軸線を基準にしてただ直角に折り曲げれば良く、これにより、上記印刷回路基板状体に対するロック、及びロック解除が良好に行なえるラッチ片を比較的簡単に成形し易い。

【0026】

また、上記一对のラッチ部のそれぞれのラッチ片は、一对を成して成形したので、上記印刷回路基板状体をロックしたときに、上記印刷回路基板状体にラッチ片が2点で引っ掛かり、印刷回路基板状体に対するラッチ片のロック力を比較的強いものとすることができる。

【0027】

また、請求項3記載によると、上記折曲片14により、上記プリント回路基板を解除するとき、上記ペン先や指先で上記折曲片を上方から押した場合、上記ペン先や指先が折曲片の面上を滑り、上記ラッチ部は、外側へ押される。つまり、上記ペン先や指先を使った上方からの一方向からのみの力で上記ラッチ部を外側へ押すことができ、簡単に而も早く上記プリント回路基板のロック解除が行なえ、ロック解除の操作を簡単なものとし易い。